

**REMARKS**

Claims 1-95 have been examined. Applicants are canceling claims 5, 7, 10, 13, 29, 31, 34, 37, 53, 55, 58, 61 and 83-87, amending claims 1, 3, 4, 6, 8, 9, 11, 14, 15, 25, 27, 28, 30, 32, 33, 35, 38, 39, 49, 51, 52, 54, 56, 57, 59, 62, 63, 72-82 and 88-90 and adding new claims 96-153.

Applicants thank the Examiner for acknowledging Applicants' claim for priority under 35 U.S.C. § 119(a) - (d) and further for acknowledging receipt of all certified copies of the priority documents. Applicants also thank the Examiner and the Draftsperson for approving the original drawings filed on April 6, 1999.

Applicants have enclosed an Information Disclosure Statement for the Examiner's review and consideration.

This Amendment is believed to be fully responsive to each point of rejection raised by the Examiner in the non-final Office action dated May 17, 2002. Accordingly, Applicants respectfully request favorable reconsideration and allowance of the pending claims.

**Rejection of Claims 3, 27 and 51 under 35 U.S.C. § 112, second paragraph**

The Examiner has rejected claims 3, 27 and 51, under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicants have amended claims 3, 27 and 51 in view of the remarks by the Examiner in the non-final Office action, on page 2. Applicants respectfully request that the rejection of claims 3, 27 and 51, under 35 U.S.C. § 112, second paragraph, be withdrawn.

**Rejection of Claims 1, 7, 18-22, 25, 31, 42-46, 49, 50, 55, 66-70, 72, 73, 83, and 91-93 under  
35 U.S.C. § 102(e) – Dahlman**

The Examiner has rejected claims 1, 7, 18-22, 25, 31, 42-46, 49, 50, 55, 66-70, 72, 73, 83, and 91-93 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 5,896,368 (hereinafter Dahlman). Applicants respectfully traverse this rejection.

Base claims 1, 25 and 49, recite inserting in a vacant period a first control signal that includes a pilot signal to be used for transmission power control for a forward link. Dahlman fails to teach or suggest this aspect of Applicants' invention.

The system of Dahlman is not inserting a power control bit and a pilot signal during the idle time, which allegedly corresponds to the claimed vacant period. (See Figure 3B of Dahlman). Rather, Dahlman discloses that transmission quality (e.g. transmission power) occurs during the information (info) part of the frame. (Column 9, lines 63-67). Indeed, column 10, lines 1-6 of Dahlman discloses that “[d]uring the rest of the frame, i.e. the idle part, the power is turned off.” (Emphasis added).

For at least these reasons, independent claims 1, 25 and 49 and dependent claims 18-22, 42-46, 50, and 66-70 are patentable over the Dahlman reference. Applicants respectfully request that the rejection of these claims under 35 U.S.C. § 102(e), be withdrawn.

For reasons similar to those presented above in conjunction with independent claim 1, claims, 72 and 73 and dependent claims 91-93 are patentable over Dahlman.

**Rejection of Claims 23-24, 47-48, 71 and 94-95 under 35 U.S.C. § 103(a) – Dahlman**

The Examiner has rejected claims 23-24, 47-48, 71 and 94-95 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dahlman. Applicants respectfully traverse this rejection.

Dahlman fails to suggest claims 1, 25, 49 and 72 for the reasons provided above, therefore, claims 23-24, 47-48, 71 and 94-95 are patentable at least by virtue of their dependency.

Additionally, one skilled in the art would have recognized that Dahlman fails to suggest that the vacant period is provided by issuing a notice. Rather, Dahlman discloses that the short-code modulator 210 comprising the mode control device 400 (figure 4) of a downlink traffic information processor (figure 2A) determines whether a frame is transmitted using normal or compressed mode. (Col. 8, lines 34-44; col. 9, lines 25-30).

**Rejection of Claims 2, 4-6, 8-17, 26, 28-30, 32-41, 52-54, 56-65, 74-82 and 84-90 under § 103(a) – Dahlman and Andoh**

The Examiner has rejected claims 2, 4-6, 8-17, 26, 28-30, 32-41, 52-54, 56-65, 74-82 and 84-90 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dahlman, and further in view of Andoh. Applicants respectfully traverse this rejection.

Applicants note that Figure 1 of Andoh fails to compensate for the deficiencies of Dahlman with respect to independent claims 1, 25, 49 and 72. Dahlman and Andoh, individually or in combination fail to teach or suggest claims 1, 25, 49 and 72. Therefore, dependent claims 2, 4, 6, 8, 9, 11, 12, 14 and 15, (independent claim 1), dependent claims 26, 28, 30, 33, 36, 39

(independent claim 25), dependent claims 52, 54, 57, 60, 63 (independent claim 49), and dependent claims 88 (independent claim 72) are patentable at least by virtue of their dependency.

For reasons analogous to those presented above with respect to independent claim 1 -- independent claims 16, 17, (dependent claims 32, 35, and 38), 40, 41, (dependent claims 56, 59 and 62), 64, 65, 74, 75 (dependent claim 89), 76, 77, 78 (dependent claim 90), and 79-82 are patentable over Dahlman and Andoh, individually or in combination.

Additionally, claims 16, 17, 40, 41, 64, 65, 78, 79-82 and 90 include the claimed third control signal immediately after the end of the vacant period, which is neither disclosed or suggested by Dahlman and Andoh, individually or in combination.

Finally, “[t]here must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination.” MPEP §2143 (8<sup>th</sup> Edition)(Basic Requirements of a Prima Facie Case of Obviousness) In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP §2143.01 (8<sup>th</sup> Edition)(Fact That References Can Be Combined or Modified Is Not Sufficient To Establish Prima Faice Obviousness); In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990).

The Examiner’s reason to combine the alleged teachings of Dahlman and Andoh are tainted with impermissible hindsight and evidences a piecemeal approach to Applicants’ invention. Notwithstanding, even assuming *arguendo* that a skilled artisan had combined the teachings of Dahlman and Andoh in the manner suggested by the Examiner, such a combination

would not have rendered Applicants' invention obvious. Indeed, the alleged teachings of Andoh fail to cure the deficiencies of Dahlman, with respect to power control bits and a pilot signal in a vacant period, as remarked above. Put another way, Dahlman and Andoh, when considered as a whole, does not render obvious Applicants' invention.

For at least these reasons, Applicants respectfully request that the rejection to the above-mentioned claims be withdrawn. For reasons analogous to those presented above, new claims 96-153 should be patentable over the prior art.

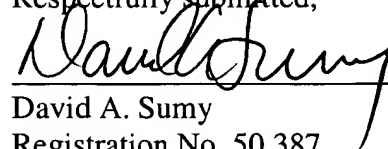
#### **Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for any extension of time that may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

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**APPENDIX**

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

**The specification is changed as follows:**

**Page 3, first full paragraph:**

Conventional, in the case where ~~own~~a station has a period not performing transmission and reception, such as time division multiple access (TDMA), utilizing the vacant slot period, there is a method, in which a radio frequency is switched from the radio frequency in current communication to a frequency measurement object for using quality measurement of the radio link of the different frequency carrier. In this method, since communication and measurement of the different frequency carrier are not performed simultaneously, it can be adapted by switching of the radio frequency and it is not necessary to separately provide a radio machine for measuring the different frequency carrier.

**IN THE CLAIMS:**

**Claims 5, 7, 10, 13, 29, 31, 34, 37, 53, 55, 58, 61, 83-87 are canceled.**

**The claims are amended as follows:**

1. (Amended)            A mobile communication system comprising:

transmission control means for providing a vacant period, in which no communication data is present, in one or more of communication frames, and inserting a first control signal ~~for maintaining a communication quality~~ which includes a pilot signal to be used for a transmission power control for a forward link in said vacant period.

3. (Amended) A mobile communication system as set forth in claim 2, wherein said time interval of said first control signal inserted during said vacant period is set to be longer than a time interval of said first control signal in a communication mode where transmission data are present in said communication frame which does not include any vacant periods

4. (Amended) A mobile communication system as set forth in claim 1, wherein said transmission control means provides a vacant period from a timing immediately after a second control signal ~~for maintaining communication quality~~ which includes a pilot signal to be used for a transmission power control for a forward link.

6. (Amended) A mobile communication system as set forth in claim 1, wherein said transmission control means transmits a third control signal ~~for maintaining communication quality~~ which includes a pilot signal to be used for a transmission power control for a forward link immediately after end of said vacant period.

8. (Amended) A mobile communication system as set forth in claim ~~54~~, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a transmission power control for a forward link.

9. (Amended) A mobile communication system as set forth in claim 6, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a transmission power control for a forward link.

11. (Amended) A mobile communication system as set forth in claim ~~54~~, wherein said second control signal includes a transmission power control information for reverse link.

14. (Amended) A mobile communication system as set forth in claim ~~54~~, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a transmission power control for a forward link and a transmission power control information for reverse link.

15. A mobile communication system as set forth in claim 6, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a



transmission power control for a forward link and a transmission power control information for reverse link.

25. (Amended) A communication control method comprising:

a step of providing a vacant period, in which no communication data is present, in one or more of communication frames, and

a step of inserting a first control signal ~~for maintaining a communication quality which~~ includes a pilot signal to be used for a transmission power control for a forward link in said vacant period, for transmission.

27. (Amended) A communication control method as set forth in claim 26, wherein

said time interval of said first control signal inserted during said vacant period is set to be longer than a time interval of said first control signal in a communication mode where transmission data are present in said communication frame which does not include any vacant periods.

28. (Amended) A communication control method as set forth in claim 25, wherein

in said step of providing the vacant period, said vacant period is provided immediately after a second control signal ~~for maintaining communication quality which includes a pilot signal to be~~ used for a transmission power control for a forward link.

30. (Amended) A communication control method as set forth in claim 25, wherein a third control signal ~~for maintaining communication quality, at a timing which includes a pilot~~ signal to be used for a transmission power control for a forward link immediately after said vacant period.

32. (Amended) A communication control method as set forth in claim ~~29~~28, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a transmission power control for a forward link.

33. (Amended) A communication control method as set forth in claim 30, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a transmission power control for a forward link.

35. (Amended) A communication control method as set forth in claim ~~29~~28, wherein said second control signal includes a transmission power control information for reverse link.

38. (Amended) A communication control method as set forth in claim ~~29~~28, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the~~

~~communication data or~~ a transmission power control for a forward link and a transmission power control information for reverse link.

39. (Amended) A mobile communication system as set forth in claim 30, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or~~ a transmission power control for a forward link and a transmission power control information for reverse link.

49. (Amended) A base station in a mobile communication system, comprising:  
transmission control means for providing a vacant period, in which no communication data is present, in one or more of communication frames, and inserting a first control signal ~~for maintaining a communication quality~~ which includes a pilot signal to be used for a transmission power control for a forward link in said vacant period.

51. (Amended) A base station as set forth in claim 50, wherein said time interval of said first control signal inserted during said vacant period is set to be longer than a time interval of said first control signal in a communication mode where transmission data are present in said communication frame which does not include any vacant periods.

52. (Amended) A base station as set forth in claim 49, wherein said transmission control means provides a vacant period from a timing immediately after a second control signal for maintaining communication quality which includes a pilot signal to be used for a transmission power control for a forward link.

54. (Amended) A base station as set forth in claim 49, wherein said transmission control means transmits a third control signal for maintaining communication quality which includes a pilot signal to be used for a transmission power control for a forward link immediately after end of said vacant period.

56. (Amended) A base station as set forth in claim ~~53~~52, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the communication data or a~~ transmission power control for a forward link.

57. (Amended) A base station as set forth in claim 54, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or a~~ transmission power control for a forward link.

59. (Amended) A base station as set forth in claim ~~53~~52, wherein said second control signal includes a transmission power control information for reverse link.

62. (Amended) A base station as set forth in claim ~~53~~52, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the communication data or a~~ transmission power control for a forward link and a transmission power control information for reverse link.

63. (Amended) A base station as set forth in claim 54, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or a~~ transmission power control for a forward link and a transmission power control information for reverse link.

72. (Amended) A mobile station in a mobile communication system, comprising:  
quality measuring means for receiving a first control signal for maintaining a communication quality transmitted in a vacant period in which no communication data is present, in one or more of communication frames and measuring a reception quality on the basis of said first control signal; and

transmitting means for generating and transmitting a transmission power control information for a forward link according to said reception quality,

wherein said first control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

73. (Amended) A mobile station in a mobile communication system, comprising:  
demodulation means for receiving a first control signal for maintaining a communication quality transmitted in a vacant period in which no communication data is present, in one or more of communication frames and demodulating a communication data using the first control signal,

wherein said first control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

74. (Amended) A mobile station in a mobile communication system, comprising:  
means for receiving a first control signal for maintaining a communication quality transmitted in a vacant period in which no communication data is present, in one or more of communication frames and controlling a transmission power in a reverse link according to said first control signal,

wherein said first control signal includes a transmission power control information for reverse link.

75. (Amended) A mobile station in a mobile communication system, comprising:  
quality measuring means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no

communication data is present, in one or more of communication frames and measuring a reception quality on the basis of said second control signal; and

transmitting means for generating and transmitting a transmission power control information for a forward link according to said reception quality,

wherein said second control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

76. (Amended) A mobile station in a mobile communication system, comprising:

demodulation means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and demodulating a communication data using said second control signal,

wherein said second control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

77. (Amended) A mobile station in a mobile communication system, comprising:

means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and controlling a transmission power in a reverse link on the basis of said second control signal,

wherein said second control signal includes a transmission power control information for reverse link.

78. (Amended) A mobile station in a mobile communication system, comprising:  
quality measuring means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and receiving a third control signal for maintaining the communication quality transmitted at a timing immediately after said vacant period, and measuring a reception quality on the basis of said second or third control signal; and  
transmitting means for generating and transmitting a transmission power control information for a forward link according to said reception quality,

wherein said second control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

79. (Amended) A mobile station in a mobile communication system, comprising:  
demodulation means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and receiving a third control signal for maintaining the communication quality transmitted at a timing immediately after said vacant period, and demodulating a communication data using said second or third control signal,



wherein said second control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

80. (Amended) A mobile station in a mobile communication system, comprising:

quality measuring means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and receiving a third control signal for maintaining the communication quality transmitted at a timing immediately after said vacant period, and measuring a reception quality on the basis of said third control signal;

transmitting means for generating and transmitting a transmission power control information for a forward link according to said reception quality; and

means for controlling a transmission power in a reverse link on the basis of said second control signal,

wherein said third control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

81. (Amended) A mobile station in a mobile communication system, comprising:

demodulation means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and receiving a third

control signal for maintaining the communication quality transmitted at a timing immediately after said vacant period, and demodulating a communication data using said third control signal; and

means for controlling a transmission power in a reverse link on the basis of said second control signal,

wherein said third control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

82. (Amended) A mobile station in a mobile communication system, comprising:

demodulation means for receiving a second control signal for maintaining a communication quality transmitted at a timing immediately before a vacant period in which no communication data is present, in one or more of communication frames and receiving a third control signal for maintaining the communication quality transmitted at a timing immediately after said vacant period, and demodulating a communication data using said third control signal;

quality measuring means for measuring a reception quality on the basis of said third control signal;

transmitting means for generating and transmitting a transmission power control information in a forward link according to the reception quality; and

means for controlling a transmission power in a reverse link on the basis of said second control signal,

wherein said third control signal includes a pilot signal to be used for demodulation of the communication data or a transmission power control for a forward link.

88. (Amended) A mobile station as set forth in claim 72, wherein said first control signal includes a pilot signal to be used for ~~demodulation of the communication data or a transmission power control for a forward link~~ and a transmission power control information for reverse link.

89. (Amended) A mobile station as set forth in claim 75, wherein said second control signal includes a pilot signal to be used for ~~demodulation of the communication data or a transmission power control for a forward link~~ and a transmission power control information for reverse link.

90. (Amended) A mobile station as set forth in claim 78, wherein said third control signal includes a pilot signal to be used for ~~demodulation of the communication data or a transmission power control for a forward link~~ and a transmission power control information for reverse link.

**Claims 96-153 are added as new claims.**